

PERMIT BOOK

STATE OF MISSOURI



DEPARTMENT OF NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number **08 2 0 1 0 - 0 1 0**

Project Number: 2010-06-051
Installation ID: 203-0029

Parent Company: Crider Brothers Lime Co.

Parent Company Address: PO Box 35, Eminence, MO 65466

Installation Name: Crider Brothers Lime Co.

Installation Address: State Highway 106 East, Eminence, MO 65466

Location Information: Shannon County, S25, T29N, R4W

Application for Authority to Construct was made for:

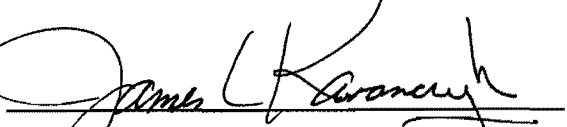
The permitting of a grandfathered rock-crushing plant to allow concurrent operations. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

Standard Conditions (on reverse) are applicable to this permit.

Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

AUG 25 2010

EFFECTIVE DATE


DIRECTOR OR DESIGNEE
DEPARTMENT OF NATURAL RESOURCES

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Departments' Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available within 30 days of actual startup. Also, you must notify the Department of Natural Resources Regional office responsible for the area within which you are located within 15 days after the actual start up of this (these) air contaminant source(s).

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant source(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."

1. **Best Management Practices Requirement**
Crider Brothers Lime Co. shall control fugitive emissions from all of the haul roads and vehicular activity areas at this site by performing Best Management Practices as defined in Attachment AA.
2. **Ambient Air Impact Limitation**
 - A. Crider Brothers Lime Co. shall not cause an exceedance of the National Ambient Air Quality Standard (NAAQS) for particulate matter less than ten microns in aerodynamic diameter (PM₁₀) of 150.0 µg/m³ 24-hour average in ambient air.
 - B. Crider Brothers Lime Co. shall demonstrate compliance with special condition 2.A using Attachment A or B or another equivalent form that has been approved by the Air Pollution Control Program, including an electronic form. Crider Brothers Lime Co. shall account for the impacts from other sources of PM₁₀ as instructed in Attachment A and B.
3. **Annual Emission Limit**
 - A. Crider Brothers Lime Co. shall emit less than 15.0 tons of PM₁₀ in any 12-month period from the entire installation.
 - B. Crider Brothers Lime Co. shall demonstrate compliance with special condition 3.A using Attachment C or another equivalent form that has been approved by the Air Pollution Control Program, including an electronic form.
4. **Moisture Content Testing Requirement**
 - A. Crider Brothers Lime Co. shall verify that the moisture content of the processes rock is greater than or equal to 1.5% by weight.
 - B. Testing shall be conducted according to the method prescribed by the American Society for Testing Materials (ASTM) D-2216, C-566 or another method approved by the Director.
 - C. The initial test shall be conducted not later than 45 days after the issuance of this permit. A second test shall be performed the calendar year following the initial test during the months of July or August.

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

- D. The test samples shall be taken from rock that has been processed by the plant or from each source of aggregate (e.g. quarry).
- E. The written analytical report shall include the raw data and moisture content of each sample, the test date and the original signature of the individual performing the test. The report shall be filed on-site or at the Crider Brothers Lime Co. main office within 30 days of completion of the required test.
- F. If the moisture content of either of the two tests is less than the moisture content in special condition 4.A, another test may be performed within 15 days of the noncompliant test. If the results of that test also exceed the limit, Crider Brothers Lime Co. shall either:
 - 1.) Apply for a new permit to account for the revised information, or
 - 2.) Submit a plan for the installation of wet spray devices to the Air Pollution Control Program Compliance Assistance section within 10 days of the second noncompliant test. The wet spray devices shall be installed and operational within 40 days of the second noncompliant test.
5. Minimum Distance to Property Boundary Requirement
The primary emission point shall be located at least 150 feet from the nearest property boundary.
6. Primary Equipment Requirement
Crider Brothers Lime Co. shall process all rock through the primary crusher (EP-4A) Bypassing the primary crusher is prohibited.
7. Record Keeping Requirement
Crider Brothers Lime Co. shall maintain all records required by this permit for not less than five years and make them available to any Missouri Department of Natural Resources personnel upon request.
8. Reporting Requirement
Crider Brothers Lime Co. shall report to the Air Pollution Control Program Enforcement Section P.O. Box 176, Jefferson City, MO 65102, no later than ten days after any exceedances of the limitations imposed by this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (5) REVIEW

Project Number: 2010-06-051
Installation ID Number: 203-0029
Permit Number:

Crider Brothers Lime Co.
State Highway 106 East
Eminence, MO 65466

Complete: June 17, 2010

Parent Company:
Crider Brothers Lime Co.
PO Box 35
Eminence, MO 65466

Shannon County (S25, T29N, R4W)

PROJECT DESCRIPTION

The installation is a grandfathered rock crushing plant with a maximum hourly design rate (MHDR) of 150 tons per hour. The facility has applied for a construction permit to allow other plants to operate concurrently at the same site. The rock crushing plant is powered through primary electrical power. No diesel engines/generator or other types of combustion sources are used by the rock crushing plant.

The applicant will use one of the methods described in Attachment AA, "Best Management Practices," to control emissions from haul roads and vehicular activity areas. This installation is located in Shannon County, an attainment area for all criteria pollutants. This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 250 tons per year and fugitive emissions are not counted toward major source applicability.

No permits have been issued to Crider Brothers Lime Co. from the Air Pollution Control Program.

TABLES

The table below summarizes the emissions of this project. The potential emissions of the process equipment, which excluded emissions from haul roads and wind erosion, are site specific and should not vary from site to site. The existing actual emissions are listed as not determined (N/D) because the facility has never submitted an Emissions Inventory Questionnaire (EIQ) to the Air Pollution Control Program. The potential emissions of the application represent the emissions of all equipment and activities assuming continuous operation (8760 hours per year). The conditioned potential emissions are based on a voluntary limit of 15.0 tons per year of PM₁₀.

Table 1: Emissions Summary (tons per year)

Air Pollutant	De Minimis Level/ SMAL	Potential Emissions of Process Equipment	Existing Actual Emissions	¹ Potential Emissions of the Application	Conditioned Potential Emissions
PM ₁₀	15.0	2.68	N/D	30.91	<15.0
SO _x	40.0	N/A	N/D	N/A	N/A
NO _x	40.0	N/A	N/D	N/A	N/A
VOC	40.0	N/A	N/D	N/A	N/A
CO	100.0	N/A	N/D	N/A	N/A
Total HAPs	25.0	N/A	N/D	N/A	N/A

N/A = Not Applicable; N/D = Not Determined

¹Includes site specific haul road and storage pile emissions

Table 2: Ambient Air Quality Impact Analysis

Pollutant	¹ NAAQS (µg/m ³)	Averaging Time	² Maximum Modeled Impact (µg/m ³)	Limited Impact (µg/m ³)	Background (µg/m ³)	³ Daily Limit (tons/day)
⁴ PM ₁₀ (same)	150.0	24-hour	192.45	130.00	20.00	2,613
⁵ PM ₁₀ (separate)	150.0	24-hour	192.45	107.04	42.96	2,152

¹National Ambient Air Quality Standards (NAAQS)

²Modeled impact at maximum capacity with controls

³Indirect limit based on compliance with NAAQS.

⁴Solitary operation or operation with other plants that are owned by Crider Brothers Lime Co.

⁵Operation with other plants that are not owned by Crider Brothers Lime Co.

EMISSIONS CALCULATIONS

Emissions for the project were calculated using emission factors found in the United States Environmental Protection Agency (EPA) document AP-42 *Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources*, Fifth Edition (AP-42).

Emissions from the rock-crushing equipment were calculated using emission factors from AP-42 Section 11.19.2 “Crushed Stone Processing and Pulverized Mineral Processing,” August 2004. The controlled emission factors were used because the inherent moisture content of the crushed rock is greater than 1.5% weight.

Emissions from haul roads and vehicular activity areas were calculated using the predictive equation from AP-42 Section 13.2.2 “Unpaved Roads,” November 2006. A 90% control efficiency is applied to the emission calculations for the use of BMPs. Emissions from load-in and load-out of storage piles were calculated using the predictive equation from AP-42 Section 13.2.4, “Aggregate Handling and Storage Piles,” November, 2006. The moisture content of the aggregate is 1.5% by weight. Emissions from wind erosion of storage piles were calculated using an equation found in the Air Pollution Control Program’s Emissions Inventory Questionnaire Form 2.8, “Storage Pile Worksheet.”

AMBIENT AIR QUALITY IMPACT ANALYSIS

An ambient air quality impact analysis (AAQIA) was performed to determine the impact of the pollutants listed in Table 2. The Air Pollution Control Program requires an AAQIA of PM₁₀ for all asphalt, concrete and rock-crushing plants regardless of the level of PM₁₀ emissions if a permit is required. An AAQIA is required for other pollutants if their emissions exceed their respective de minimis or screening model action level (SMAL). The AAQIA was performed using the Air Pollution Control Program's generic nomographs and when appropriate, the EPA modeling software SCREEN3. For each pollutant that was modeled, the maximum concentration that occurs at or beyond the site boundary was compared to the National Ambient Air Quality Standard (NAAQS) or Risk Assessment Level (RAL) for the pollutant. If during continuous operation the modeled concentration of a pollutant is greater than the applicable NAAQS or RAL, the plant's production is limited to ensure compliance with the standard. In cases where the plant is providing material for a highway project, the ambient impact is evaluated in accordance with a memorandum issued by the Air Pollution Control Program titled "Permitting Asphalt/Concrete Plants for Temporary Highway Projects," dated April 10, 2000. This memorandum states that air quality can be analyzed at the nearest residence or location where the public could reasonably expect to be found instead of all ambient air. This practice generally allows for a less restrictive daily production level while protecting the public.

This plant uses BMPs to control emissions from haul roads and vehicular activity areas, so emissions from these sources were not included in the AAQIA. Instead they were addressed as a background concentration of 20 µg/m³ of PM₁₀ in accordance with the Air Pollution Control Program's BMPs interim policy.

OPERATING SCENARIOS

The plant is permitted to operate with other plants located at the site as long as the NAAQS is not exceeded. The following scenarios explain how Crider Brothers Lime Co. shall demonstrate compliance with the NAAQS.

- When plants that are owned by Crider Brothers Lime Co., which are referred to as same owner plants, are located at the site, Crider Brothers Lime Co. must calculate the daily impact of each plant and limit the total impact of all plants below the NAAQS.
- When plants that are not owned by Crider Brothers Lime Co., which are referred to as separate owner plants, are located at the site, Crider Brothers Lime Co. must account for the impacts of these plants as a background concentration and add it to the total impact of all plants owned by Crider Brothers Lime Co. that are operating at the site. This total is limited below the NAAQS. Crider Brothers Lime Co. shall limit the total impact of all plants they own and operate at the site to 107.04 µg/m³ when any plants they do not own are located at the site. Crider Brothers Lime Co. is not permitted to operate with any plant that is not owned by Crider Brothers Lime Co. that has a separate owner background greater than 22.96 µg/m³.

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM₁₀ are conditioned below de minimis levels.

APPLICABLE REQUIREMENTS

Crider Brothers Lime Co. shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved. For a complete list of applicable requirements for your installation, please consult your operating permit.

GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110. The emission fee is the amount established by the Missouri Air Conservation Commission annually under Missouri Air Law 643.079(1). Submission of an Emissions Inventory Questionnaire (EIQ) is required June 1 for the previous year's emissions.
- A Basic Operating Permit application is required for this installation within 30 days of equipment startup.
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220
- *Restriction of Emission of Odors*, 10 CSR 10-3.090

SPECIFIC REQUIREMENTS

- 40 CFR 60 Subpart OOO, "Standards of Performance for Nonmetallic Mineral Processing Plants" applies to the equipment.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPS) or National Emission Standards for Hazardous Air Pollutants for Source Categories (MACTS) apply to the proposed equipment.

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

Chia-Wei Young
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated June 12, 2010, received June 17, 2010, designating Crider Brothers Lime Co. as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Southeast Regional Office Site Survey, dated July 1, 2010.

Attachment AA: Best Management Practices

Haul roads and vehicular activity areas shall be maintained in accordance with at least one of the following options when the portable plant is operating.

1. Pavement
 - A. The operator shall pave the area with materials such as asphalt, concrete or other materials approved by the Air Pollution Control Program. The pavement will be applied in accordance with industry standards to achieve control of fugitive emissions¹ while the plant is operating.
 - B. Maintenance and repair of the road surface will be conducted as necessary to ensure that the physical integrity of the pavement is adequate to achieve control of fugitive emissions from these areas while the plant is operating.
 - C. The operator shall periodically wash or otherwise clean all of the paved portions of the haul roads as necessary to achieve control of fugitive emissions from these areas while the plant is operating.

2. Application of Chemical Dust Suppressants
 - A. The operator shall apply a chemical dust suppressant (such as magnesium chloride, calcium chloride, lignosulfonates, etc.) to unpaved areas.
 - B. The quantities of the chemical dust suppressant shall be applied and maintained in accordance with the manufacturer's recommendation (if available) and in sufficient quantities to achieve control of fugitive emissions from these areas while the plant is operating.
 - C. The operator shall record the time, date and the amount of material applied for each application of the chemical dust suppressant agent on the above areas. The operator shall keep these records with the plant for not less than five (5) years and make these records available to Department of Natural Resources personnel upon request.

3. Application of Water-Documented Daily
 - A. The operator shall apply water to unpaved areas. Water shall be applied at a rate of 100 gallons per day per 1,000 square feet of unpaved or untreated surface area while the plant is operating.
 - B. Precipitation may be substituted for watering if the precipitation is greater than one quarter of one inch and is sufficient to control fugitive emissions.
 - C. Watering may also be suspended when the ground is frozen, during periods of freezing conditions when watering would be inadvisable for traffic safety reasons, or when there will be no traffic on the roads.
 - D. The operator shall record the date, volume of water application and total surface area of active haul roads or the amount of precipitation that day. The operators shall also record the rationale for not watering (e.g. freezing conditions or not operating).
 - E. The operator shall keep these records with the plant for not less than five (5) years, and the operator shall make these records available to Department of Natural Resources personnel upon request

¹For purposes of this document, Control of Fugitive Emissions means to control particulate matter that is not collected by a capture system and visible emissions to the extent necessary to prevent violations of the air pollution law or regulation. (Note: control of visible emission is not the only factor to consider in protection of ambient air quality.)

Attachment BB: Emission Calculations
 Crider Brothers Lime Co.
 2010-06-051

Description	¹ MHDR	MHDR Units	² PM ₁₀ EF	EF Units	Control Eff. %	Emissions (lb/hr)	³ Modeling Rate (lb/hr)
Drilling	150.0000	Tons	0.000000	N/A	0.00	0.0000	0.0000
Loader Haul from Pit to Feeder	1.2784	VMT	3.112870	lbs/VMT	90.00	0.3980	0.2889
Dump to Feeder	150.0000	Tons	0.000016	lbs/ton	0.00	0.0024	0.0017
Jaw Crusher	150.0000	Tons	0.002400	lbs/ton	75.00	0.0900	0.0653
Jaw Crusher Underconveyor	150.0000	Tons	0.001100	lbs/ton	95.80	0.0069	0.0050
Jaw Crusher Side Conveyor	150.0000	Tons	0.001100	lbs/ton	95.80	0.0069	0.0050
Scalping Screen Feed Conveyor	150.0000	Tons	0.001100	lbs/ton	95.80	0.0069	0.0050
Scalping Screen	150.0000	Tons	0.008700	lbs/ton	91.50	0.1109	0.0805
Scalping Screen Underconveyor	150.0000	Tons	0.001100	lbs/ton	95.80	0.0069	0.0050
Conveyor from Screen to Surge bin	150.0000	Tons	0.001100	lbs/ton	95.80	0.0069	0.0050
Surge Bin	150.0000	Tons	0.001100	lbs/ton	95.80	0.0069	0.0050
Haul from Surge Bin to Storage Pile	3.6058	VMT	1.952863	lbs/VMT	90.00	0.7042	0.5113
Cone Crusher Feed Conveyor	150.0000	Tons	0.001100	lbs/ton	95.80	0.0069	0.0050
Cone Crusher	150.0000	Tons	0.002400	lbs/ton	75.00	0.0900	0.0653
Cone Crusher Underconveyor	150.0000	Tons	0.001100	lbs/ton	95.80	0.0069	0.0050
Secondary Screen	150.0000	Tons	0.008700	lbs/ton	91.50	0.1109	0.0805
Secondary Screen Underconveyor	150.0000	Tons	0.001100	lbs/ton	95.80	0.0069	0.0050
Stacker Conveyor	150.0000	Tons	0.001100	lbs/ton	95.80	0.0069	0.0050
Stacker Conveyor	150.0000	Tons	0.001100	lbs/ton	95.80	0.0069	0.0050
Finish Screen Feed Conveyor	150.0000	Tons	0.001100	lbs/ton	95.80	0.0069	0.0050
Finish Screen	150.0000	Tons	0.008700	lbs/ton	91.50	0.1109	0.0805
Finish Screen Discharge Conveyor	150.0000	Tons	0.001100	lbs/ton	95.80	0.0069	0.0050
Return Conveyor	0.0000	Tons	0.001100	lbs/ton	95.80	0.0000	0.0000
Stacker Conveyor	150.0000	Tons	0.001100	lbs/ton	95.80	0.0069	0.0050
Storage Pile Load In	150.0000	Tons	0.011991	lbs/ton	0.00	1.7987	1.3060
Storage Pile Wind Erosion	2.0000	Acres	0.089166	lbs/Acre.hr	0.00	0.1783	0.1295
Storage Pile Vehicular Activity	150.0000	Tons	0.018845	lbs/tons	90.00	0.2827	0.2052
Storage Pile Load Out	150.0000	Tons	0.011991	lbs/tons	0.00	1.7987	1.3060
Customer Haul Road	6.2500	VMT	2.056039	lbs/VMT	90.00	1.2850	0.9330

N/A – Not Applicable

¹Maximum Hourly Design Rate (MHDR)

²Emission Factor (EF)

Attachment BB: Emission Calculations

Crider Brothers Lime Co.

2010-06-051

³The Modeling Rate is the emission rate scaled to the daily hours of operation at MHDR allow by the permit.